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ENDANGERED SPECIES

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California Sea Otter Translocation: A Status Report

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As late as the 19th century, sea otters (*Enhydra lutris*) were found from northern Baja California to Alaska. By the early 20th century, however, they had been extirpated from Baja California and most of California by fur hunters. Because of isolation and protection, a small population in the Big Sur area of central California survived and slowly expanded its range to about 200 miles of coastline along the center of the State. Because this small, restricted population is vulnerable to a single catastrophic event, such as an oil spill from a tanker accident, the U.S. Fish and Wildlife Service listed the California sea otter on January 14, 1977, as Threatened.

On August 11, 1987, the Service published a final rule to establish an experimental population of California sea otters at San Nicolas Island, one of southern California's Channel Islands, about 70 miles west of Los Angeles. The purposes of this reintroduction were to: 1) implement a primary recovery action for this animal; 2) obtain background information for assessing sea otter reintroduction and containment techniques; 3) gather data on population dynamics and ecological relationships of sea otters with their nearshore community; and 4) evaluate effects on the donor population of removing otters for the reintroduction. Related to the reintroduction project was the designation of a "no otter" management zone in southern California south of Point Conception and including all the Channel Islands except San Nicolas. (See BULLETIN Vol. XI Nos. 8-9 and 10-11 for details leading up to the reintroduction.)

Personnel from the Service and the California Department of Fish and Game worked during periods of good weather between late August 1987 and the end of March 1988 to capture the sea otters. Three techniques were used: dip netting, underwater traps operated by SCUBA divers, and floating tangle nets. By March 1988, 113 otters had been caught along the central California coast. Nearly half of these were immediately released at their capture site because of sex and size limitations. Sixty-eight of the otters were transported by truck to the Monterey Bay Aquarium, tagged on the rear flippers, screened for health abnormalities, and prepared for shipment to San Nicolas Island. Four died while at the Aquarium, and a fifth animal was returned to its original capture site and released. The remaining 63 sea otters (14 males and 49 females) were flown to San Nicolas Island in eight groups of one to 24 animals.

photo by Richard Bucich, courtesy Friends of the Sea Otter

California sea otter

Censusing the otters at the island has been difficult because of poor weather and sea conditions, access limitations, and the difficulty of seeing the color-coded flipper tags. Censuses have not only been hampered by winter storms, including one of the worst on record for southern California, but also by closures of the island during weapons tests. (The island is part of the U.S. Navy's Pacific Missile Test Center at Pt. Mugu.) When surveys are possible, each animal is observed until the unique color combination and position of the flipper tags is determined. This can take up to 2 hours if sea conditions are poor or if the animal is further than about a half mile from shore. Some otters have gone unidentified for extended periods of time. For example, one animal observed in October was not seen again until January, despite intensive efforts to individually identify otters at the island.

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Regional News

Regional endangered species biologists have reported the following news and activities for March:

Region 1 — Fourteen woodland caribou (*Rangifer tarandus caribou*) were released in the panhandle of Idaho. The animals were captured from a herd near Williams Lake in British Columbia, Canada. A total of 24 animals have been moved from Canada this year to join 24 animals translocated to Idaho in 1987 to supplement the Endangered southern Selkirk Mountain herd of woodland caribou. The State of Idaho considers this year's translocation to be a success. Most animals have stayed in the vicinity of the release site. One caribou died during the capture effort this year for a total of only three known mortalities in 2 years. A final translocation of animals is planned for 1989.

* * *

At the request of the Hawaii State Board of Land and Natural Resources, the Fish and Wildlife Service's Honolulu Field Office prepared a detailed list of high quality streams in Hawaii that deserve special protection from flow and channel alteration. Selection criteria included habitat for Endangered waterbirds and migratory waterfowl, riparian wetlands, anadromous fish habitat, National and State parks, wilderness areas and natural area reserves, and streams listed on the Nationwide Rivers inventory.

* * *

Biologists recently discovered a new population of the California jewelflower (*Caulanthus californicus*) on the southern Carrizo Plain, California. This plant is a Category 2 candidate for a future listing proposal. The discovery doubles the number of known natural populations of this species. One introduced stand of the California jewelflower occurs on The Nature Conservancy's Paine Wildflower Memorial Preserve.

* * *

Staff from the Service's Laguna Niguel, California, Field Station accompanied U.S. Navy and California Fish and Game personnel to San Clemente Island for a San Clemente sage sparrow (*Amphispiza belli clementeae*) survey. Results of the survey indicate that the population of this Threatened bird appears to be stable.

* * *

Region 2 — In early March, two ocelots (*Felis pardalis*), a male and a female, were translocated within the Laguna Atascosa National Wildlife Refuge on the southern coast of Texas. The female has remained in the relocation area but the male has moved about 5 miles north of the release site (still on the refuge). These Endangered cats were moved from areas where their risk of being hit by motor vehicles was high to an area of suitable habitat on the refuge that was unoccupied by ocelots. Five ocelots have been killed by motor vehicles on or near the refuge in recent years.

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As part of a 1988 joint special project with the Oklahoma Department of Wildlife Conservation, the Service's Tulsa Field Office will implement recovery measures for the interior population of the least tern (*Sterna antillarum*). This population of the

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Approved Recovery Plans

Caria W. Corin
Division of Endangered Species and Habitat Conservation
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Tobusch Fishhook Cactus

The Tobusch fishhook cactus (*Ancistrocactus tobuschii*), listed as Endangered, was first described in 1952 from a specimen collected a year earlier on the G. W. Henri Ranch east of Vanderpool, Texas. At the time of listing (1979), fewer than 200 plants were known.

This cactus grows as solitary stems up to 3.5 inches (9 centimeters) in diameter and nearly as tall. It is named for its discoverer, Herman Tobusch, and for the reddish-tipped fishhooked spine that extends laterally from the three to five central spines arrayed on each areole, which is surrounded by seven to nine radial spines. Yellow flowers 1.2 to 1.5 inches (3.0 to 3.8 cm) in diameter, each lasting nearly a week, appear from mid-February to mid-March. Most flowering is over by early April, and the green fruits ripen during the last half of May.

Historically, the Tobusch fishhook cactus has been recorded in the Edwards Plateau area of south-central Texas in Kerr, Bandera, Real, Kimble, and Uvalde Counties. Surveys in 1985 found a total of six populations in all but Kerr County. The Henri Ranch population originally discovered in 1951 has been extirpated, probably during land clearing in the 1960's. Most of the sites are on private land, but one is on a State highway right-of-way and another is on State land administered by Texas Tech University.

The Tobusch fishhook cactus grows in gravelly soils on streambanks where dominant vegetation is juniper, oak, and sycamore. In this habitat, the plants are subject to flooding, which may destroy the plants and their habitat. Many specific details of the habitat requirements of this cactus are unknown. Threats to its survival include real estate development, trampling by livestock, flooding and erosion of its habitat, and collection by cactus fanciers. Cacti are generally prized by collectors, and when the rarity of a species is known, it becomes even more of an attraction. Many of the locales inhabited by this species are well known to collectors through earlier literature.

The prime objective of the Tobusch Fishhook Cactus Recovery Plan (approved by the Fish and Wildlife Service on March 18, 1987) is to establish 4 safe populations of 3,000 plants each. At this level, which is expected to take at least 5 years, there would be sufficient genetic diversity and a buffer against catastrophic reduction or loss of one or more of the populations, and the Tobusch fishhook cactus could be considered for reclassification from Endangered to Threatened.

drawing by Linda Ashling

Tobusch fishhook cactus **(Ancistrocactus tobuschi)**

When reclassification is accomplished, the plan will be reevaluated and criteria for attaining full recovery can be determined. Specific steps in the recovery plan are to:

1. remove immediate human threats by protecting known populations from collecting and habitat destruction;
2. establish a permanent living collection at a botanical garden or university;
3. minimize long-range threats by development of biological information relevant to recovery;
4. establish a 5-year survey program to more precisely determine the distribution of the species;
5. develop a comprehensive trade management plan for all cacti;
6. develop a program to provide propagated plants and seeds to commercial markets; and
7. develop public awareness, appreciation, and support for the preservation of this species.

These recovery steps will require the cooperation of the private landowners and government land managing agencies on whose land the cactus is found. Working together, all parties can help save this unique plant.

Three Florida Mints

The Recovery Plan for Three Florida Mints was approved by the Fish and Wildlife Service on July 1, 1987. These Endangered plants, all inhabitants of sandy scrub communities, are threatened by ever-expanding development in peninsular Florida.

These congeneric mints are perennials with a woody base and non-woody flowering shoots. They are aromatic, with a strong minty odor, and all three inhabit bare sand exposed to sunlight. Lakela's mint (*Dicerandra immaculata*) grows to 1.3 feet (40 cm) in height and has lavender-rose to purplish flowers which bloom from September to November. It is endemic to a narrow strip of the Atlantic Coastal Ridge between Vero Beach and Fort Pierce. All known sites are on private land, mostly in residential lots, where it grows in well-drained sand at the margins of sand pine scrub.

Scrub mint (*D. frutescens*), with white or pale pink flowers spotted with dark reddish-purple, grows up to 1.6 feet (49 cm) high and blooms in September and October. It inhabits a limited area of the Lake Wales Ridge in Highlands County. One of its four known sites is the Archbold Biological Station, where it has been able to persist indefinitely in fire lanes through the sand pine scrub. Two other localities have recently been sold or partially destroyed. A remaining locality is in a subdivision and is susceptible to development.

The longspurred mint (*D. cornutissima*) also grows to 1.6 feet (49 cm), and its purple-rose flowers also are spotted with reddish-purple. It is found southwest of Ocala on the Sumter Upland in Marion County, and formerly occurred also in Sumter County. This species inhabits the margins of scrub vegetation. Its largest populations are in residential subdivisions, frequently along street rights-of-way, where it tends to be eliminated as homes are built. None of its known populations are in protected areas, although the Cross-Florida National Conservation Area (in the planning stages) will include suitable habitat for the mint.

The major threats to the survival of these species have been loss of habitat due to development (commercial, residential, and sand mining) and depletion of the gene pool because of small population sizes.

According to the recovery plan, any of the three species can be considered for reclassification to Threatened when 10 separate, self-sustaining populations are established at secure sites in peninsular Florida. Delisting can be considered when a species reaches 20 separate, self-sustaining populations. These goals are subject to change depending on any new information discovered during the recov-

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Approved Plans

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ery process, including new interpretations of the systematics of this genus.

To attain these recovery goals, it will be necessary to protect and manage existing populations through means such as conservation easements, lease agreements, or acquisition of sites by Federal, State, or local agencies. Protection may require emergency actions where habitat destruction is imminent, possibly including removal of plants from such sites if they can be used elsewhere to aid in the recovery effort. Protected habitats will need to be managed to prevent excessive vegetational succession. Prescribed burning may be the best tool in some instances to prevent encroachment of trees and shrubs into the open sites needed by the three mint species.

Conservation of germ plasm is another important part of the recovery process. Research on seed storage and plant propagation is needed, and collections need to be established. One commercial nursery, Woodlander, Inc., in South Carolina, has successfully propagated all three species from cuttings. Work on propagation by seed is proceeding at other institutions.

Establishment and management of new populations in protected sites with suitable habitat is necessary. Preferred areas are where the plants are native: Sumter Upland for longspurred mint, Lake Wales Ridge for scrub mint, and the Atlantic Coastal Ridge from Vero Beach to Stuart for Lakela's mint.

drawing by Bruce Edward Tatje

Lakela's mint **(Dicerandra immaculata)**

Nashville Crayfish

The Nashville crayfish (*Orconectes shoupi*), listed in 1986 as Endangered, is found only in the Mill Creek drainage in Davidson and Williamson Counties, Tennessee. There are also records from Richland Creek in Davidson County, but none have been recaptured there and *O. shoupi* may have been displaced at that site by a related species of crayfish.

This 7-inch (18-cm) crustacean has been found in a wide range of environments in Mill Creek, including gravel-cobble runs, pools with up to 4 inches (10 cm) of settled sediment, and under limestone slabs and other cover. Molting individuals and females carrying eggs or young tend to seek out large slabrocks for protection.

The Nashville crayfish has probably never been widespread. The most urgent threat to its survival is water quality degradation. The lower portion of Mill Creek runs through metropolitan Nashville, Tennessee, and the upper reaches are affected by runoff from agricultural areas. Studies have found that water quality has already been affected by pollution from these sources. The presence of a high proportion of its population in an urban area makes the crayfish vulnerable to a single catastrophic event, such as a chemical spill. Another threat is competition from the related, more abundant, and apparently more adaptable crayfish *Orconectes placidus*, which is suspected to have displaced *O. shoupi* from the Richland Creek drainage.

The Nashville Crayfish Recovery Plan was approved on August 27, 1987. To consider this crayfish for reclassification from Endangered to Threatened status, three goals should be accomplished. First, there should be two viable populations: the existing population and another that is either reintroduced or discovered during further surveys. The second reclassification step is for the reintroduced or discovered population to: a) be self-sustaining for at least 10 years without augmentation; b) represent a significant portion of the crayfish fauna of the creek; and c) be stable or increasing in range. (This would help preclude displacement by more competitive species.) The third part of the goal is to sufficiently protect the species and its habitat from both human-related and natural threats likely to cause extinction in the foreseeable future.

Ways to achieve these goals include protecting the existing Mill Creek population through strict enforcement of State and Federal laws regarding Endangered species, water quality, and stream modification. There is also a need to identify current and foreseeable impacts on the Mill Creek habitat and to implement pro-

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photo by Dick Biggins

Nashville crayfish **(Orconectes shoupi)**

Status Reviews Initiated for Chimpanzees

The chimpanzee (*Pan troglodytes*) and pygmy chimpanzee (*P. paniscus*) are listed by the Fish and Wildlife Service as Threatened species. Pursuant to a petition filed by three wildlife conservation organizations, the Service has initiated a status review for both species to determine whether or not they should be proposed for reclassification as Endangered.

The petition, submitted jointly by the Jane Goodall Institute, World Wildlife Fund, and Humane Society of the United States, was received by the Service on November 4, 1987. It contained information indicating that the status of *P. troglodytes* has deteriorated substantially since it was originally listed as Threatened in 1976. Among the threats this primate is said to face are massive habitat destruction, fragmentation of populations (and associated vulnerability to disease), excessive hunting and capture by people, and inadequate national and international controls. International trade in chimpanzee infants for the biomedical research market is also considered to have a significant impact on the species in the wild.

After examining the petition, the Service concluded that it contains "substantial information indicating that the requested action may be warranted." Accordingly, a status review was begun. Because the related pygmy chimpanzee also inhabits the tropical forests of Africa, it may face the same increased threats; therefore, the Service is including this species in the review. Comments, information, and questions should be sent to the Office of Scientific Authority, Mail Stop 527, Matomic Building, U.S. Fish and Wildlife Service, Washington, D.C. 20240, by July 21, 1988. After considering the information received by that time, the Service will decide whether or not to propose reclassification of both species from Threatened to Endangered.

photo by Geza Teleki, courtesy of World Wildlife Fund

Chimpanzees are thought to be in greater danger than ever before because of widespread habitat loss, excessive take by people, and other threats.

A decision to reclassify the chimpanzee and/or the pygmy chimpanzee as Endangered would remove the applicability of the special rule for primates [50 CFR 17.40(c)] to these chimpanzee species. Therefore, the Service is interested in comments as to what, if any, effect the removal of current trade exemptions might indirectly have on the wild populations of these chimpanzees. If the reclassification were warranted but removal of the special rule might impact the wild population, the Service would consider alternative procedures to alleviate restrictions adversely affecting the wild populations.

Riparian Systems Conference

On September 22–24, 1988, University Extension at the University of California—Davis will host the second "California Riparian Systems Conference." This event will report on issues surrounding the destruction of streamside lands and on progress made in learning to manage these resources since the first conference in 1981. Also discussed will be new concerns for restoration of riparian habitats along disturbed river and creek banks throughout the State.

The conference schedule includes professionally-oriented daytime programs for Thursday and Friday and seminars to bring professionals, activists, and the general public closer together on riparian issues for the evenings and Saturday. For more information, contact Dana Abell at (916)752-3098.

Approved Plans

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tective measures. Research into the life history of the Nashville crayfish must be conducted to efficiently plan any reintroduction activities. Public education is in progress with the development of a slide-tape program for distribution to schools in the Nashville area. This program emphasizes the need to protect environmental quality in Mill Creek, the only known habitat of the Nashville crayfish. Development of this program was a cooperative venture among the Tennessee Department of Conservation; the U.S. Army Corps of Engineers, Nashville District; Tennessee Wildlife Resources Agency; and the Service. In any public education program, it is imperative not to identify specific locations inhabited by these animals in order to protect them from take for food and for use as fishing bait.

The goals of the plan may be reevaluated as data are generated during the recovery effort. At present, it is considered that complete removal from the protection of the Endangered Species Act is not likely because of the limited population and the threats to the habitat. It is hoped, however, that through these recovery efforts reclassification to Threatened status may be feasible in the future.

* * *

Copies of these and all other recovery plans are available for purchase about 6 months after they are approved. Requests should be sent to the Fish and Wildlife Reference Service, 6011 Executive Boulevard, Rockville, Maryland 20852, or call toll-free 800/582-3421. (In Maryland, dial 301/770-3000.)

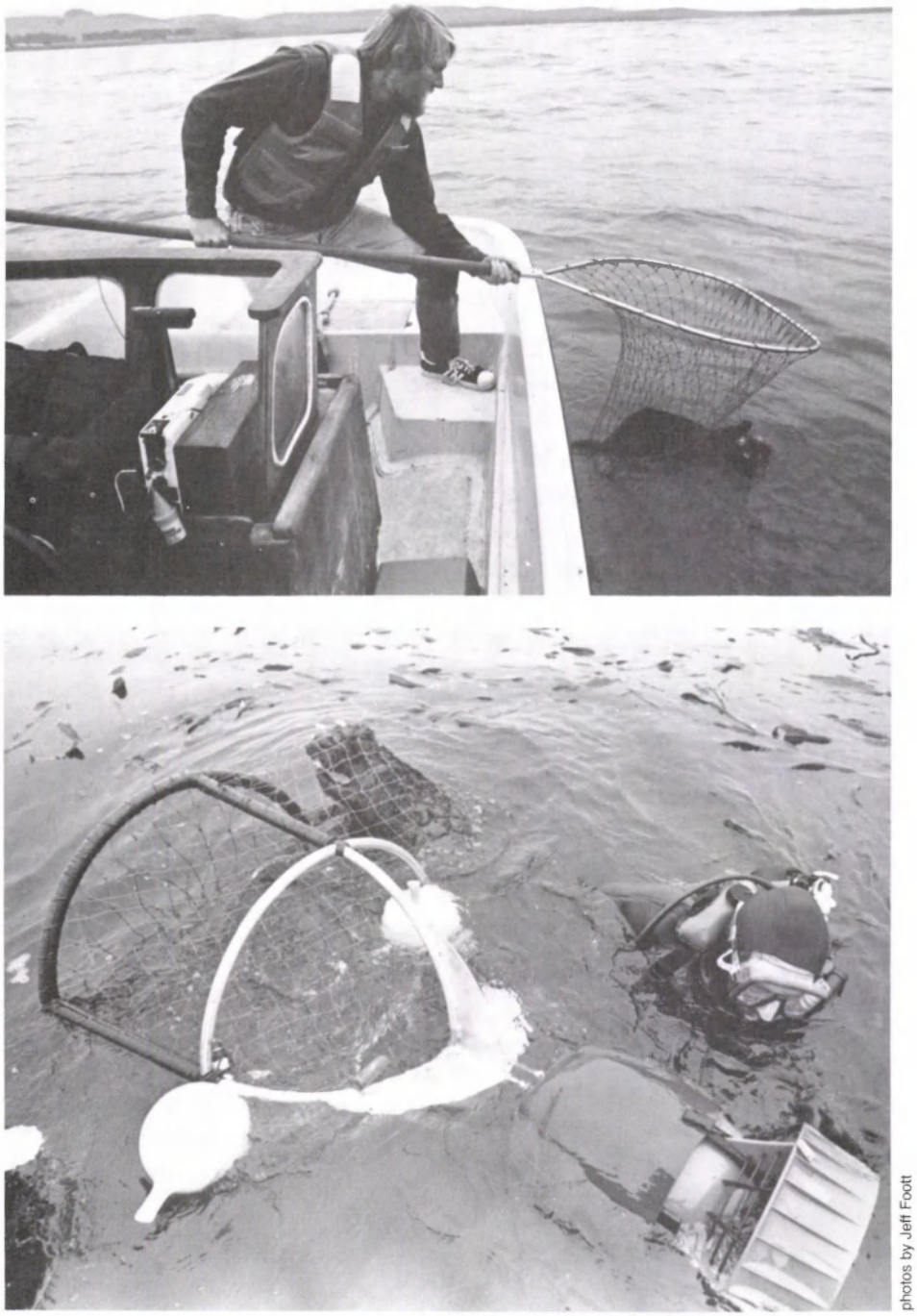
Sea Otter

(continued from 1)

As of March 31, we know that 18 sea otters are no longer at San Nicolas Island. Eight of them left the island and returned to the donor population. When another was found in the "no otter" management zone in late December 1987, she was caught and moved back to her original capture site in central California. All nine of these otters are doing fine along the mainland. On the other hand, three males died at San Nicolas from stress related to their capture and transportation. Two females were found dead on beaches in southern California. (One of these had been shot by someone and the other died of undetermined causes.) At least one other translocated otter drowned after becoming entangled in fishing gear, and it is suspected that another three met the same fate. This leaves a theoretical population of 45 animals at the island. Between February 28 and March 28, 1988, 21 of these 45 sea otters were identified at the island.

The other twenty-four animals are considered "missing", including six that were never sighted after their release at the island. The eight that returned to the parent population also were considered missing for periods of time between 26 and 208 days until they were sighted on the mainland. These eight otters represent 25 percent of the 32 otters that at one point or another have been considered missing. We had anticipated that more of the sea otters would stay around San Nicolas Island. It is, however, premature to assume that the 24 animals that are still missing are dead. We are continuing to search for these otters and are optimistic that we will find some of them back in the parent population. However, some may have lost their flipper tags, thus making it impossible to identify them.

By comparing the weights of animals that have remained at San Nicolas Island with those of the otters that have returned to the mainland, we found that small (juvenile) otters are more likely to remain at the island than large (adult) animals. Based on this information, we will be even more selective when choosing otters for transport to San Nicolas Island in the future.



photos by Jeff Foott

Dip nets (above) and underwater traps operated by SCUBA divers (below) were two of the methods used to capture California sea otters for translocation.

Now (late March), more than 7 months after the new colony of sea otters was created, about a third of the reintroduced animals are routinely sighted around the island. It is still too early to say anything about the success of the translocation; however, as a comparison, it is useful to review the history of another reintroduction effort. Fifty-nine sea otters from Alaska were released during 1969 and 1970 along the State of Washington's coastline. At least 16 of the 29 released in 1969 died within 2 weeks. No data are available on deaths after the second release of 30 sea otters in 1970. Very few data on the reintroduced animals were recorded until 1977, when Service biologists conducted the first intensive survey. At that time, only 19 otters, including 4 pups, were observed. Population surveys during the 1980's suggest that the Washington population has been slowly increasing. Total counts in 1981, 1983, 1985, and 1987 were 36, 52, 65, and 94, respectively. Thus, barring any disasters, it appears that the sea otter population off Washington is established and should continue to grow.

If the Washington reintroduction can be used as an example, it could take at least 5 years before the new colony at San Nicolas Island shows evidence of growth. However, for the San Nicolas Island reintroduction, the Service has the option to move up to 250 otters from the parent population to assist in this effort. By moving additional smaller sea otters to San Nicolas Island, we hope to establish a self-sustaining colony there in less than 5 years. If the reintroduction is a long-term success, it will be a giant step toward the recovery of the California sea otter.

Marine Mammal Report Available

The Fish and Wildlife Service has issued its annual report for calendar year 1986 on administration of marine mammals under its jurisdiction, as required by section 103(f) of the Marine Mammal Protection Act of 1972. The report contains accounts on eight mammals: the polar bear (*Ursus maritimus*), walrus (*Odobenus rosmarus)*, dugong (*Dugong dugon*), West indian manatee (*Trichechus manatus*), Amazonian manatee (*T. inunguis*), West African manatee (*T. senegalensis*), marine otter (*Lutra felina*), and sea otter (*Enhydra lutris*). [The southern sea otter (*E. l. nereis*), marine otter, dugong, and all three manatees also are listed under the Endangered Species Act.]

Administrative actions discussed in the report include Endangered and Threatened species (particularly the West Indian manatee and the southern sea otter in California), marine mammals in Alaska, law enforcement, scientific and public display permits, research, Outer Continental Shelf environmental studies, international activities, and appropriations.

Copies of the report are available by writing to the Publications Unit, U.S. Fish and Wildlife Service, 148 Matomic Building, Washington, D.C. 20240.

Regulations Proposed for Incidental Take of Marine Mammals

In the March 15, 1988, *Federal Register*, the U.S. Fish and Wildlife Service (Department of the interior) and the National Marine Fisheries Service (Department of Commerce) jointly published regulations to implement recent amendments to the Endangered Species Act and the Marine Mammal Protection Act (MMPA). These amendments provide a legal mechanism for allowing certain incidental takings of Endangered, Threatened, or "Depleted" marine mammals. Previously, incidental take of marine mammals designated as Depleted was not allowed under the MMPA. The amendments were designed to make the two laws more consistent, and the proposed changes in the regulations would implement these amendments.

A discussion providing background and details on this issue was published with the proposal. Comments on the proposed changes should be sent to the Director, Office of Protected Resources and Habitat Programs, National Marine Fisheries Service, Washington, D.C. 20235, by May 16, 1988.

Regional News

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tern was listed by the Service in 1985 as Endangered due to declining numbers. River modification resulting from such activities as dam construction, channelization, navigation and hydropower projects, and water withdrawals for irrigation, has caused loss and degradation of tern breeding habitat. Least terns nest on barren to sparsely vegetated beaches, including salt flats, sand and gravel bars, spits, and islands. High quality breeding areas with adequate food available are in short supply, and terns frequently must compete with people who use the remaining beach space for recreation. Human-related disturbances at tern colonies can be devastating. Unattended eggs and chicks overheat in the sun or are crushed by people, their vehicles, pets, and livestock.

The joint recovery project will focus on increasing public awareness of least terns. in addition to encouraging television and newspaper coverage of terns during the breeding season, and enlisting the help of Scout Troops in building and placing chick shelters at tern colonies, recovery project members will develop a pamphlet and narrated videotape on the tern. The pamphlet and video should be available for distribution by the end of Fiscal Year 1988. Anyone wishing to receive copies of the pamphlet and a loan of the video should contact Laura Hill at the Tulsa Field Office, U.S. Fish and Wildlife Service, 222 S. Houston Avenue, Suite A, Tulsa, Oklahoma 74127; telephone 918/581-7458 or FTS 745-7458.

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The Dawson and Nebraska Public Power Districts, both located in central Nebraska, have agreed to cooperate in evaluating powerline markers that might reduce bird collisions. Twelve-inch, bright yellow aeronautical balls were installed on company lines with which sandhill cranes (*Grus canadensis*) frequently collided along the Platte River, Nebraska. The Service's Wyoming Cooperative Fishery and Wildlife Research Unit will monitor crane collisions on marked and unmarked lines for the next 2 to 3 years to see if markers reduce collision frequency. The resulting data will have application to the recovery of whooping cranes (*Grus americana*) because collisions with powerllnes are the number one known cause of death of free-flying whoopers. This research will complement a study in Colorado that is testing another marker in differing habitat conditions where the line collisions are predominantly by geese and ducks.

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Whooping cranes occurred in the southeast and wintered on portions of the Atlantic coast in the 19th century. The U.S. Whooping Crane Recovery Plan has a goal of establishing three wild, self-sustalnlng populations, including one in eastern North America, so that the species may be reclassified from the Endangered category to Threatened. In 1983, the recovery team recommended research at potential reintroduction areas in the upper peninsula of Michigan and adjacent Ontario, Canada; Okefenokee Swamp in southern Georgia; and three sites in central Florida. Project leaders reported on their studies at the recovery team meeting in February. The recovery team has now narrowed the candidate release sites to Kisslmmee Prairie in Florida and the Okefenokee Swamp. Both sites would be suitable for attempting to establish a nonmigratory whooping crane population like that which survived in Louisiana into the 1940's. Captive-reared whoopers would be introduced using the "gentle release' technique that has been successful in supplementing the wild population of the Endangered Mississippi sandhill crane (*Grus canadensis pulla*) in Jackson County, Mississippi. Specific selection of a proposed release site will occur in summer 1989, and the first birds could be released as early as 1991.

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Region 6 — During the week of February 22-26, 1988, approximately 300 people attended public meetings in Libby, Troy, Trout Creek, Thompson Falls, and Kallspell, Montana, on a proposal to test augmentation of the grizzly bear (*Ursus arctos*) population in the Cabinet-Yaak ecosystem by adding 4 to 8 grizzly bears to the estimated 15 bears that now live there. The proposal is intended to help meet the grizzly bear recovery goal for the Cabinet-Yaak ecosystem. The 60-day comment period closed on March 31, 1988. After comments are organized and evaluated, a decision will be made on whether or not to proceed with the proposal.

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Region 6 recently assembled a group of four biologists in the Grand Island, Nebraska, Office to be known as the "Platte River Task Group." The Group is charged with conducting studies and other activities related to the recovery of four Threatened and Endangered bird species (whooping crane; bald eagle; interior least tern; and piping plover, *Charadrius melodus*) on the Platte River.

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The second meeting of the Black-Footed Ferret interstate Coordinating Committee was held in Northglenn, Colorado, March 8-9, 1988. Representatives of 9 of the 12 States within the potential range of the ferret (*Mustela nigripes*) were in attendance. The committee will be expanded to involve a national represent-

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ative from Federal land management agencies. The Coordinating Committee serves as an advisor to the Regional Director of the Fish and Wildlife Service in Denver, who has lead responsibility to coordinate recovery of the black-footed ferret throughout its potential range. For now, captive breeding appears to be the best strategy for recovery of the species. There are no known ferrets in the wild at this time. The Committee met to discuss programs and problems involved in identifying, evaluating, and ranking ferret habitat (prairie dog ecosystems) for possible reintroduction of captive-reared black-footed ferrets in 1991.

* * *

Region 7 — The recent listing of the Aleutian shield-fern (*Polystichum aleuticum*) as Endangered marks the first listing of a plant in Alaska. Despite surveys in each of the past 4 years, one population consisting of only 6 plants comprises the current known world population for the species. However, because this plant occurs at high elevations on remote Aleutian islands, the Service is optimistic that additional specimens will be found. Toward this end, three teams of botanists will be conducting surveys this July and August on several of the Aleutian Islands, including Attu, Unalaska, Atka, and Adak. The shield-fern is without close relatives in North America and appears to be a relict of preglacial times.

* * *

Region 8 (Research) — This year to date (March 25), three captive pairs of Puerto Rican parrots (*Amazona vittata*) at the Puerto Rico Research Station aviary have produced fertile eggs. This includes two of the four fertile pairs from 1987 and an additional captive pair. The production of fertile eggs from this additional pair is very important from a genetic standpoint. The male was caught in the wild in the early 1970's and is thought to be the only representative of his family line in the captive flock.

* * *

In February, 10 palilas (*Loxioides bailleui*) were captured and fitted with miniature radio transmitters prior to release. The birds will be tracked at the Mauna Kea study area on the island of Hawai'i daily for up to 28 days, which is the expected life of the transmitter batteries. This study will provide researchers with information on home-range and movement patterns of individual birds during the pre-breeding period.

BOX SCORE OF U.S. LISTINGS AND RECOVERY PLANS

Category	ENDANGERED U.S. Only	ENDANGERED U.S. & Foreign	ENDANGERED Foreign Only	THREATENED U.S. Only	THREATENED U.S. & Foreign	THREATENED Foreign Only	SPECIES* TOTAL	SPECIES WITH PLANS
Mammals	28	19	240	3	3	23	316	23
Birds	61	15	145	7	3	0	231	55
Reptiles	8	7	59	14	4	14	106	21
Amphibians	5	0	8	4	0	0	17	6
Fishes	41	2	11	25	6	0	85	45
Snails	3	0	1	5	0	0	9	7
Clams	29	0	2	0	0	0	31	21
Crustaceans	5	0	0	1	0	0	6	1
Insects	8	0	0	7	0	0	15	12
Plants	139	6	1	31	3	2	183	56
TOTAL	327	49	467	97	19	39	998	263 **

Total U.S. Endangered 376
Total U.S. Threatened 116
Total U.S. Listed 492

Recovery Plans approved: 223
Species currently proposed for listing: 17 animals
31 plants

*Separate populations of a species that are listed both as Endangered and Threatened are tallied twice. Those species are: the leopard, gray wolf, bald eagle, piping plover, roseate tern, Nile crocodile, green sea turtle, and olive Ridley sea turtle. For the purposes of the Endangered Species Act, the term "species" can mean a species, subspecies, or distinct vertebrate population. Several entries also represent entire genera or even families.

**More than one species are covered by some recovery plans, and a few species have separate plans covering different parts of their ranges.

Number of Cooperative Agreements signed with States and Territories: 51 fish & wildlife
April 30, 1988 36 plants

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ENDANGERED SPECIES

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